patients, implanted with a non-rechargeable device (Kinetra™, Soletra™, Itrel®2) between 1996 and 2010. Overall, 117 implantations were performed (primo-implantation and replacement). The mediane time to replacement of the non-rechargeable devices was 2.9 years, ranging between 0.4 and 7.8 years. When extrapolated to the cohort population, the use of the rechargeable device would have avoided a total number of 215 hospitalizations over 9 years. The number of days of hospitalization avoided per patient was 10 days. The direct medical cost (device and hospitalization tariffs) avoided per patient was 27 886€. **CONCLUSIONS:** Over 9 years, the rechargeable DBS device allows to avoid 2 device replacements per patient. This is associated with a 40 % reduction of the total number of days in hospital, and 43% reduction in the direct medical cost. The rechargeable neurostimulator Activa®RC is adapted to patients with high energy needs like dystonia patients, with a time to replacement of 5 years or less.

PMD21

THE CLINICAL AND ECONOMIC BENEFITS OF SPINAL CORD STIMULATION IN THE TREATMENT OF FAILED BACK SURGERY SYNDROME (PRECISE STUDY)

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OBJECTIVES: PRECISE study aims to assess the costs and the clinical benefits of Spinal Cord Stimulation (SCS) (plus conventional medical management, CMM) in the treatment of Failed Back Surgery Syndrome (FBSS) patients not adequately responding to CMM alone. Being the study closed, we report the preliminary clinical and resource consumption final results. **METHODS:** An observational, pre-post data collection with a 24-months follow-up (FU) was developed in 9 Italian Hospitals. Resource consumption, clinical outcomes (Pain Numerical Rating Scale - NRS, Oswestry Disability Index - ODI) and HR-QoL data (SF-36, EQ-5D) were collected before and after the SCS system implantation in order to be compared. **RESULTS:** Fifty-five of the 72 patients implanted (out of the 80 enrolled for the SCS screening) completed the study. Seventeen discontinued the therapy due to: consent withdrawal (24%), loss to FU (24%), SCS-related issues (29%), non-SCS related reasons (24%). Mean pain intensity decreased from 7.4±1.4 to 4.2±2.6 in the first 12 months, remaining consistent through the second year of FU (4.1±2.5). A continuous improvement in function measured with ODI was appreciated: 47 (85%) patients improved in the first year and 33 (60%) during the second, for a total of 41 (82%) patients improved at 24-month FU if compared to the baseline. EQ-VAS increased from 37 to 60 (12-months) to 63 (24-months). All SF-36 domains significantly improved, and especially "Bodily Pain", "Social Functioning", "Role Emotional". With respect to the baseline, the monthly per-patient resource consumption decreased: considering the second year of follow-up, both pain-related hospitalizations and GP visits experienced a 70% reduction in number, diagnostic exams diminished by the 82%. Monthly caregivers' days off from work dropped by the 80% (from 45 to 9). **CONCLUSIONS:** SCS allows a better and sustained pain control and HR-QoL improvement. If compared with CMM alone, SCS permits a reduction in resource consumption and productivity losses.

PMD22

ECONOMIC EVALUATION OF AMINO-TERMINAL PRO-BRAIN NATRIURETIC PEPTIDE (NT-PROBNP) TEST IN PATIENTS WITH DYSPNEA ATTENDING TO EMERGENCY DEPARTMENT (ED) IN SPAIN

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OBJECTIVES: Diagnosis of patients with dyspnea and suspected acute heart failure (HF) using NT-proBNP testing has been studied internationally. We aimed to analyze the efficiency of NT-proBNP compared to standard clinical evaluation alone use in Spanish Emergency Departments. **METHODS:** A decision-analytic model was developed to evaluate the clinical and economic outcomes of both diagnostic alternatives. Model's time horizon started at patient ED visits and ended after 60 days of follow-up (taking into account differences between hospitalized and non-hospitalized patients). Clinical parameters were mainly extracted from the PRIDE study and were validated by expert opinion (ED and cardiology doctors). We assumed that 65% of patients with dyspnea had HF based on Spanish published data. Resource use was obtained through expert opinion and examined under a National Healthcare System (NHS) perspective. We considered a 900 pg/ml cut-point for NT-proBNP test (sensitivity of 90% and specificity of 85%). Our model compared final diagnostic result with the initial diagnostic before ED discharge. A probabilistic sensitivity analysis was carried out in order to handle uncertainty. **RESULTS:** Diagnosis using NT-proBNP testing was correct in 91.96% of patients (59.09% true positive cases and 32.87% true negative cases) versus 85.53% with the standard clinical evaluation alone (50.79% of true positive cases and 34.74% of true negative cases). Besides, NT-proBNP testing involved less costs (4,045€ versus 5,405€) mainly due to less hospitalizations and a shorter length of stay. Robustness of results was confirmed through a sensitivity analysis. **CONCLUSIONS:** NT-proBNP test is less costly per correctly diagnosed patient than standard clinical evaluation alone in the assessment and management of patients with dyspnea at ED rooms from Spanish NHS perspective.

PMD23

CHARACTERIZATION OF FOCAL LIVER LESIONS BY CONTRAST-ENHANCED ULTRASOUND IN THE NETHERLANDS: AN ECONOMIC EVALUATION

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OBJECTIVES: Liver imaging techniques aim to correctly characterize focal lesions and influence choices of therapeutic strategies. The objective of this study was to compare diagnostic efficacy and direct medical costs of contrast-enhanced ultrasound (CEUS) to magnetic resonance imaging (MRI) or computed tomography (CT) in the characterization of focal liver lesions in the The Netherlands. **METHODS:** This prospective study enrolled 170 patients at an academic hospital in the The Netherlands. A decision model was designed to compare two diagnostic algorithms based on the results of the study: 1) a typical patient work-up, which included ultrasound (US), followed by an MRI or CT examination, and 2) a new patient work-up in which CEUS was performed after US. The perspective of the healthcare sector in the The Netherlands was used. Clinical outcomes were 'correctly characterizedx benign and malignant liver lesions and life-years (LY). Model inputs were taken from the hospital database, literature and publicly available sources. Time horizon was two years. One-way and probabilistic sensitivity analyses were performed to assess uncertainty in the results. **RESULTS:** CEUS was able to identify benign and malignant focal liver lesions with a sensitivity of 96.9% and specificity of 92.3%. For correct tumor subgroup characterization, sensitivity and specificity were 86.2% and 85.6% respectively. Base-case results revealed that the CEUS strategy had similar effectiveness compared to the MRI/CT strategy (incremental effects of 0.002 LYs) and resulted in cost-savings of €452. The cost-savings for diagnostic phase and treatment phase were €160 and €292 respectively. The results were sensitive to specificity, sensitivity and cost of the diagnostic tests. Robustness of the results was confirmed by probabilistic sensitivity analysis. **CONCLUSIONS:** This study demonstrates that CEUS is a cost-saving alternative compared to the traditional diagnostic procedures and should be considered as one of the 'first stepx options in the front-line characterization of focal liver lesions in the The Netherlands.

PMD24

COST-EFFETIVENESS OF 3M ™ COBAN 2 ™ COMPRESSION SYSTEM IN THE TREATMENT OF LYMPHOEDEMA

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OBJECTIVES: The treatment of chronic lymphoedema (CL) is of particular health economic interest since, due to its chronic nature and continuous need for treatment, it is associated with high costs and considerable patient burden. The objective of this study was to assess the cost-effectiveness of 3M™ Coban 2™ compression system in the treatment of CL compared to Comprilan® short-stretch bandage compression therapy. **METHODS:** In the UK and the United States a multi-center, prospective, open-label study was conducted, including patients with CL of the legs (n=40) and the arms (n=42). Patients were randomly assigned to the four treatment arms (3M™ Coban 2™ compression treatment either daily, 2x/wk or 3x/wk, and daily compression therapy with Comprilan® bandages). Cost analysis from the UK payors' perspective was based on material costs and personal resource utilization for bandage changes and for manual lymphtherapy. Clinical outcomes in the cost-effectiveness analysis was defined as mean volume reduction at the end of therapy (19 days). **RESULTS:** On average, 3 weeks treatment for a patient with lymphoedema added to 1,297.96 € for the health service comissioners and up to 576,54 € for the physiotherapists across all groups. Lymphoedema treatment with 3M™ Coban 2™ compression system twice a week was more cost-effective than the other treatments (ICER 37.65 € per % reduction of circumference vs. 146.60 € (daily), 145.67 € (3x/wk) and 147.53 € (daily compression therapy with Comprilan® bandages)). Results were comparable for patients with CL of the upper and lower extremities, respecitvely. Sensitivity analysis provided stable results after variation of costs, utilization rates and clinical outcomes. **CONCLUSIONS:** Treatment of lymphoedema with 3M™ Coban 2™ compression system twice a week is more efficient than treatments applied daily or three times per week.

PMD25

COST-EFFECTIVENESS OF TRANSCATHETER AORTIC VALVE IMPLANTATION (TAVI) IN HIGH-RISK OR INOPERABLE PATIENTS WITH SYMPTOMATIC AORTIC VALVE STENOSIS IN SPAIN

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OBJECTIVES: Transcatheter aortic valve implantation (TAVI) represents an innovative technology superior to medical management (PARTNER study, US) in inoperable patients with severe aortic valve stenosis (AVS). This study aims to estimate the cost-effectiveness of TAVI compared to conservative medical management in symptomatic AVS patients in Spain. **METHODS:** A economic longitudinal cohort model was used to predict clinical and economic outcomes of symptomatic AVS patients treated with either transapical (TA) or transfemoral (TF) TAVI, or medical management alone (MEDICAL). Clinical model input data for TAVI was derived from the real-world SOURCE registry, and for MEDICAL from literature and a registry of 60 untreated Spanish AVS patients followed up for 336 days. Health utilities as well as resource use and unit costs utilized for modelling are representative for Spain. Missing information was substituted by expert estimates. Economic results

are expressed as cost per quality adjusted life year (QALY) gained. Perspective is that of the national health system (NHS). Benefits and costs were discounted with 3% per year. **RESULTS:** Over the 3 year analysis period, 2.12 life years per patient were achieved with TA TAVI, 2.31 with TF TAVI and 1.51 with conservative medical care, representing. 1.24, 1.38 and 0.74 QALYs, respectively. Cumulative direct costs were predicted to amount to €37,311 and €35,689 with TA and TF TAVI, respectively and to €23,103 with conservative care. Cost/QALY gained was €28,003 for TA TAVI and €19,499 for TF TAVI, both ratios remaining well below the accepted willingness-to-pay threshold for Spain. The substantial cost of the TAVI procedure was largely offset over time mainly by savings related to prevented hospital readmissions for cardiac reasons. Sensitivity analyses indicated these findings to be robust. **CONCLUSIONS:** Compared to conservative management, TAVI is a life-saving and cost-effective treatment for high-risk or inoperable patients with symptomatic aortic valve stenosis in Spain.

PMD27

COST-EFFECTIVENESS ANALYSIS OF CARDIAC RESYNCHRONIZATION THERAPY IN PATIENTS WITH ASYMPTOMATIC TO MILD HEART FAILURE BASED ON THE EUROPEAN COHORT OF THE REVERSE STUDY FROM THE SPANISH HEALTH SYSTEM PERSPECTIVE

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OBJECTIVES: The aim of this study was to combine clinical results from the REVERSE study (Resynchronisation reverses Remodelling in Systolic Left Ventricular Dysfunction) and costs associated with the addition of cardiac resynchronization therapy (CRT) to optimal medical therapy (OMT) in patients with mild symptomatic (NYHA I-II) or asymptomatic left ventricular dysfunction and markers of cardiac dyssynchrony in Spain. **METHODS:** We developed a Markov model of CRT + OMT (CRT-ON group) vs. OMT alone (CRT-OFF group) based on a retrospective cost-effectiveness analysis. Raw data from the model was derived from literature and expert opinion, reflecting clinical and economic consequences of patient's management in Spain. Time horizon was 10 years, and costs were expressed in Euro 2010. Both costs and effects were discounted at 3% per annum. **RESULTS:** CRT-ON group showed higher total costs than CRT-OFF, however patients with CRT reduced 94% the length of hospitalization in the ICU (0.006 vs. 0.091 days) and 34% in general ward (0.705 vs. 1.076 days). Surviving patients with CRT-ON (88.2% vs. 77.5%) remained in slighter functional class longer and they achieved an improvement of 0.9 life years (LYGs) and 0.77 years quality-adjusted life years (QALYs). In terms of cost per LYGs, the results were €40,782 (5 years) and €18,431 (10 years), and in terms of costs per QALYs gained were €39,800 and €21,500 at 5 and 10 years respectively. Probabilistic sensitivity analysis showed that the probability of CRT-ON was cost-effective is 65.54% at 10 years. **CONCLUSIONS:** The use of CRT added to OMT represents an efficient use of resources in patients suffering from heart failure in NYHA functional class I and II, with cost-effectiveness ratios below the Spanish threshold at 10 years.

PMD28

COST-EFFECTIVENESS ANALYSIS OF THREE LEPROSY CASE DETECTION METHODS IN NORTHERN NIGERIA

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OBJECTIVES: Case detection is key to identifying leprosy disease early in its development for more effective prevention of progression to permanent disability. The study evaluated the costs and cost-effectiveness of three leprosy case detection methods in Nigeria's north-eastern states of Adamawa and Gombe; namely Rapid Village Survey (RVS), Household Contact Examination (HCE) and Traditional Healer's (THs) incentive approach **METHODS:** The study was cross-sectional and explorative, undertaken in routine practice setting, targeting endemic and non-endemic communities selected randomly. Primary and secondary data were collected from routine practice records and the Nigerian Leprosy Elimination Programme 2009. All costs were measured from both providers' and patients' perspectives. Effectiveness was measured as new cases detected and outcome expressed as cost per case detected. Incremental approach, using routine passive case detection method as a reference was used to estimate the costs and effects by comparing each method against the routine practise; to measure additional cost per new case detected, as incremental cost-effectiveness ratio (ICER). Univariate sensitivity analysis was carried out to evaluate uncertainties around the ICER. All costs were converted to US Dollars at the 2010 exchange rate. **RESULTS:** HCE generated a total of $2416 at the lowest rate of $142 per additional case detected at all contact levels, as the most cost-effective method while the RVS was dominated by THs method which generated a total of $4447 at $193 per new case detected.Variation of diagnostic accuracy and subsistent wage for valuing unpaid time did not significantly change the results. **CONCLUSIONS:** From both perspectives and at all contact levels, the Household Contact Examination, complementing routine practice demonstrated the most cost-effective approach to identifying new leprosy cases for effective prevention and control of leprosy in Nigeria. It will be necessary to carry out implementation studies to establish the feasibility and acceptability of the method in other leprosy areas.

PMD29

A1CNOW® AS AMBULATORY MONITORING OF GLYCATED HEMOGLOBIN IN DIABETIC TYPE 2 (DM2) PATIENTS: BRAZILIAN ECONOMIC MODELING

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OBJECTIVES: To determine the cost-effectiveness of measuring glycated hemoglobin with A1CNow ® compared with standard exam (SE) for DM2 patients, from the Brazilian Private Healthcare System perspective. **METHODS:** The study was a cost-effectiveness analysis based on Markov modeling to estimate costs and consequences of treatments. Epidemiological and efficacy data derived from a critical appraisal of the scientific literature. Only direct medical costs were considered. If available, costs of clinical events (CE) were obtained from burden of disease studies. If not, Brazilian official guidelines were obtained to determine the resources used to treat the CE. Drugs, hospital daily admission rates, procedures and laboratory tests unit costs were obtained from Brazilian official databases. Costs and benefits were discounted at 5% yearly. Outcomes were expressed as CE avoided. Probability sensitivity analysis (PSA) was conducted to assess model robustness. Life time horizon was analyzed. **RESULTS:** Through the systematic review of the literature the studies were selected to form the body of clinical data for the analyses. The systematic review showed that although the absence of studies directly evaluating the impact of A1CNow on cardiovascular events, their favorable influence on cardiovascular disease intermediate markers suggests that A1CNow may have clinically relevant effect in patients at risk. The analysis showed higher clinical benefits and lower costs for A1CNow. Considering 100 patients, 99.8 and 146.1 CE happen in A1CNow and SE arms, respectively. The average time-horizon cost per patient was R$25,444(€11,108) and R$29,278(€12,782) for A1CNow and SE, respectively, showing the dominance of A1CNow compared to SE. PSA demonstrated that in 95.3% of the simulations A1CNow was dominant (more effective with lower cost) compared to SE. **CONCLUSIONS:** Our study demonstrated that A1CNow have clinically relevant effect in reducing CE being dominant for monitoring of glycated hemoglobin in DM2 patients. PSA confirmed this determinist result.

PMD30

COST-EFFECTIVENESS ANALYSIS OF PULMONARY VEIN ISOLATION (PVI) USING A NOVEL CRYO ENERGY-BASED BALLOON CATHETER: A HIGH-VALUE PROCEDURE FOR PAYERS?

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OBJECTIVES: Atrial Fibrillation (AF) is the most common arrhythmia among the elderly. It has dire consequences, stroke being the most catastrophic. Its burden is highly significant; changing demographics lead to more patients impacted. Managing AF encompasses arrhythmia control and stroke prevention – with new technologies being developed for both. For Paroxysmal AF (PAF) – which terminates spontaneously within 7 days – electrical Pulmonary Vein Isolation (PVI) has advanced as the cornerstone treatment in patients unresponsive to pharmaceuticals. PAF accounts for 75% of patients, and half are medicated with sub-optimal outcomes. We sought to evaluate the cost-effectiveness of PVI when using a new balloon-based catheter using cooling energy for lesion creation (Arctic Front, Medtronic). **METHODS:** A Markov Microsimulation Model compared treatment with Arctic Front vs. conventional drugs. STOP-AF Pivotal Trial Data were used to estimate PVI efficacy and complication rates. A literature review identified data for long-term PVI and drug therapy outcomes. The model incorporated Arctic Front specific complication rates (e.g. stroke, tamponade and phrenic nerve paralysis) and drug toxicities and impact on stroke risk was included. Utility weights were assigned for various health states. and a range of time horizons was used, with a UK perspective adopted for costs and benefits. One-way and probabilistic sensitivity analyses were undertaken. **RESULTS:** Depending on the time horizon, the ICER ranged from £3,200/QALY to £15,700/QALY gained. Results were sensitive to assumptions regarding long-term outcomes and the quality of life benefit of remaining free of PAF. **CONCLUSIONS:** PVI can be highly cost-effective in treating PAF – a highly prevalent and burdensome disease. Results are consistent with similar technology economic evaluations, and reinforce the evidence base for PVI as a cost-effective therapy for PAF.

PMD31

ECONOMIC EVALUATION OF PRIMOVIST VERSUS EXTRACELLULAR CONTRAST IN IMAGING OF LIVER METASTASES OF COLORECTAL ORIGIN

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OBJECTIVES: The main purpose of this study was to conduct an economic evaluation of Primovist enhanced MRI (PV-MRI) compared to extracellular contrast-media-enhanced MRI (ECC-MRI) in patients suffering from liver metastases of colorectal origin in Spain. **METHODS:** An analytic model previously implemented in three European countries (Germany, Italy and Sweden) was adapted in Spain to estimate all aggregated costs of both diagnosis options compared. Probabilities of needing further imaging and of needing surgical plans modification or confirmation were adjusted by Spanish clinical experts (surgeons and radiologists). Contrasts cost was estimated from PTR (weighting the different EECs prices for sales in Spain for this option), and tests (MRI and CT) and different surgery procedures (high or low risk, modification or confirmation of surgical plans, etc.) costs were extracted from official fees of different Spanish Autonomous Communities (CCAA). **RESULTS:** PV-MRI was associated with a reduced need for extra imaging tests (6% vs. 9%). Taking into account the costs of diagnosis tests and surgery procedures (including modification of surgical plans during intervention), PV-MRI option was a cost-neutral strategy, with total costs similar to ECC-MRI (576 € vs. € 578, PV-MRI vs ECC-MRI respectively). **CONCLUSIONS:** Additional costs associated with colorectal liver metastases diagnosis with PV-MRI regarding to ECC-MRI are offset by lower